

Flexible Tube-Based Network Control, Phase I

Completed Technology Project (2009 - 2009)



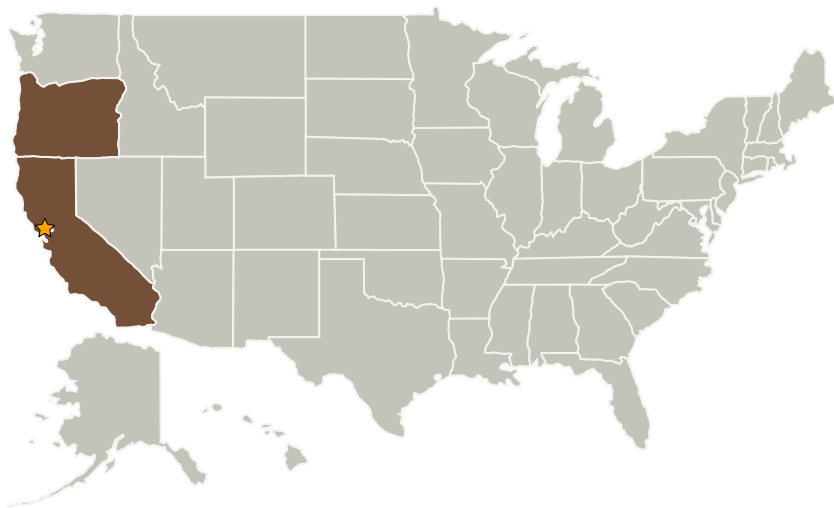
Project Introduction

The Innovation Laboratory, Inc. builds a control system which controls the topology of an air traffic flow network and the network flow properties which enables Air Traffic Management (ATM) to adapt to hazardous weather constraints and provide high capacity flows in the National Airspace System (NAS). The Network Flow Organizer automatically adjusts the flows of air traffic with respect to weather hazards and Special Use Airspace (SUA) constraints and allows for parallel flows along the network (a 2-times (2x) to 3-times (3x) increase in today's flow rates) without conflicts at intersection points.

Anticipated Benefits

The proposed software has application to military systems as well. In wartime, the constraints are very dynamic and automated airspace usage planning is required to support the pilot and the mission. The airspace may be constrained by weather, but also by hostile threats, both moving and stationary. With minor modifications, our solution approach for estimating the avenues of approach and for estimates of total troop movement flow rates.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
The Innovation Laboratory, Inc.	Supporting Organization	Industry Women-Owned Small Business (WOSB)	Portland, Oregon

Primary U.S. Work Locations

California	Oregon
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Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Project Manager:

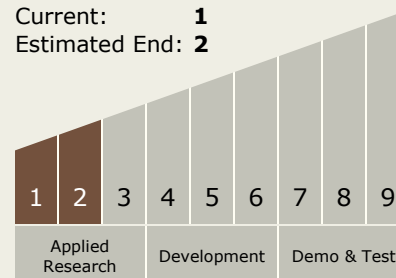
Gregory L Wong

Principal Investigator:

Joseph Krozel

Technology Maturity (TRL)

Start: **1**
 Current: **1**
 Estimated End: **2**



Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
 - └ TX16.3 Traffic Management Concepts